

of the second properties and the third properties is dissimilar to the first properties, the roofing material further comprising a layer of surface granules embedded in the top portion of the coating;

wherein the coatings comprise one of the group consisting of:

(F) the top portion comprising a first coating having a top surface layer of the top portion having an increased adhesion defined by a granule loss of less than 0.8 grams when the roofing material is soaked in water for seven days and then tested by ASTM Method D4977; and wherein the bottom portion of the coating does not have the increased adhesion;"

Hansen discloses a roofing shingle including a glass fiber mat saturated with a mixture of unblown asphalt and polymer, and a top coating that is a mixture of blown asphalt and filler. A layer of surface granules may be embedded in the top coating. Hansen fails to teach or suggest a top surface layer of the coating having increased adhesion, in combination with a bottom portion of the coating not having increased adhesion, as recited in claim 53.

George et al. discloses a roofing shingle including an asphalt-based substrate such as an asphalt-saturated glass fiber mat, and a non-asphalt adhesive on the surface of the asphalt-based substrate. Roofing granules are embedded in the top surface of the roofing shingle such that the adhesive provides an interface between the asphalt and the roofing granules. The adhesive is present in an amount sufficient to improve the adhesion of the roofing granules to the asphalt.

In the final Office Action, the Examiner stated that it would have been obvious to have used an adhesive on the top asphalt layer of Hansen in order to increase the ability of the top layer to retain granules because of the teachings of George et al. The Examiner further stated that he assumes that the increased adhesion of the top layer of Hansen in view of George et al. meets the granule loss limitation of the ASTM method recited in claim 53 absent evidence to the contrary.

Applicants respectfully submit that it would not have been obvious to use the George et al. adhesive on the top surface of the Hansen roofing shingle in order to increase granule adhesion. There is no suggestion in Hansen of any need to increase

granule adhesion. Hansen relates to a roofing shingle having improved low temperature flexibility, and it is unrelated to the specifics of granules or their adhesion. Hansen discloses that the roofing shingle may contain other components such as granules, sealing tabs, and sand or talc, but that the general design and general preparation of such shingles are left to those skilled in the art. Application of the George et al. adhesive to the top surface of the Hansen roofing shingle would increase the cost of the shingle, both because of the cost of the additional non-asphalt adhesive material (e.g., a hot melt polymeric adhesive) and the cost of the additional manufacturing step of applying the adhesive (e.g., by spraying with a spray gun). There would be no motivation to increase the cost of the shingle in the absence of any recognized need to increase the granule adhesion.

Moreover, even if the teachings of Hansen and George et al. were combined, the resulting product would be different from the invention recited in claim 53. The claimed invention is an asphalt-based roofing material including a mat saturated and coated with an asphalt-based coating, the asphalt-based coating including a top portion having a top surface layer that has increased adhesion, and the asphalt-based coating including a bottom portion that does not have the increased adhesion. Thus, the increased adhesion layer is a portion of the asphalt-based coating. In contrast, George et al. requires the use of a non-asphalt adhesive such as a hot melt polymeric adhesive, because (as stated at column 2, lines 4-23) adherence between coating asphalt and granules is subject to deterioration by moisture which can lead to granule loss. In view of the stated motivation to use a non-asphalt adhesive, it would not be obvious to replace the non-asphalt adhesive with an asphalt layer having increased adhesion.

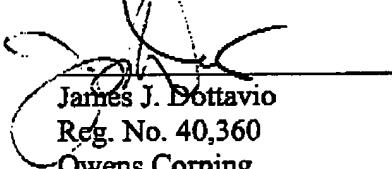
The language of claim 53 clearly requires that the increased adhesion layer be a portion of the asphalt-based coating. A non-asphalt adhesive such as disclosed in George et al. does not meet this claim limitation. This claim interpretation is supported by the specification at page 17, lines 21-27, where it is stated that at least the top surface of the top portion of the asphalt-based coating has increased adhesion to prevent granule loss. For example, the top portion of the asphalt-based coating may be made with a polymer-modified asphalt to increase its adhesion. The specification further states that, optionally, a layer of an adhesive material can be applied to the top

surface of the asphalt-based coating to further improve the granule adhesion. In other words, the top portion of the asphalt-based coating has increased adhesion, and optionally an adhesive can be applied to the top surface to further improve the adhesion. However, the adhesive is an optional material that can be applied in addition to the top portion of the asphalt-based coating having increased adhesion -- the adhesive does not take the place of the top portion of the asphalt-based coating having increased adhesion.

In view of the above, Applicants respectfully submit that claim 53 is nonobvious over Hansen in view of George et al.

If any questions should arise with respect to the above remarks, or if it would in any way expedite the prosecution of this application, it is requested that the Examiner contact Applicants' attorney at the number listed below. If any fees are due in connection with the filing of this amendment, including any fee for a required extension of time under 37 CFR 1.136(a) for which Applicants hereby petition, please charge all necessary fees to deposit account no. 50-0568.

Respectfully submitted,


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